State of California
Regional Water Quality Control Board
San Diego Region

EXECUTIVE OFFICER SUMMARY REPORT
May 12, 2004

ITEM: 15

SUBJECT: Status Report: Orange County MS4 Storm Water Programs Annual Report *(Jeremy Haas)*

PURPOSE: The purpose of this item is to provide the Orange County MS4 Permittees with an opportunity to update the Regional Board on their urban runoff management programs. No Regional Board action is necessary on this item.

PUBLIC NOTICE: The Public was notified of this item in the agenda notice for today's meeting, which was mailed on April 23, 2004.

DISCUSSION: Order No. R9-2002-001, (NPDES Permit No. CAS0108740) was issued in February 2002 to regulate discharges of urban runoff from the municipal separate storm sewer systems (MS4s) draining watersheds in the Orange County portion of the San Diego Region. The Permittees include the cities of Aliso Viejo, Dana Point, Laguna Beach, Laguna Hills, Laguna Niguel, Laguna Woods, Lake Forest, Mission Viejo, Rancho Santa Margarita, San Clemente, San Juan Capistrano, the County of Orange and Orange County Flood Control District.

The permittees requested the opportunity to present a verbal report on their program activities. They previously updated the Regional Board in April 2003. As background to today's discussion, enclosed is a report by Jeremy Haas about the Regional Board's activities during the last year related to the Permittees' urban runoff management programs. These activities have focused on providing compliance assistance directed at developing effective jurisdictional and watershed programs by the Permittees. In addition, the report discusses our next year's workplan priorities for the MS4 program in Orange County. The report has been provided to the Permittees and has also been posted on the Regional Board's website.

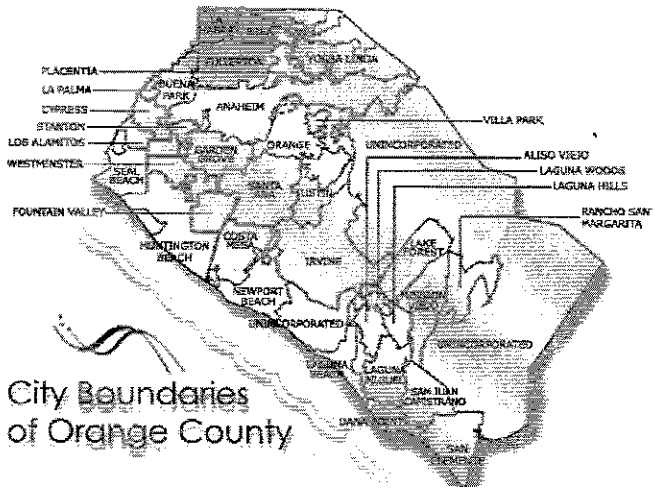
LEGAL CONCERNS: None

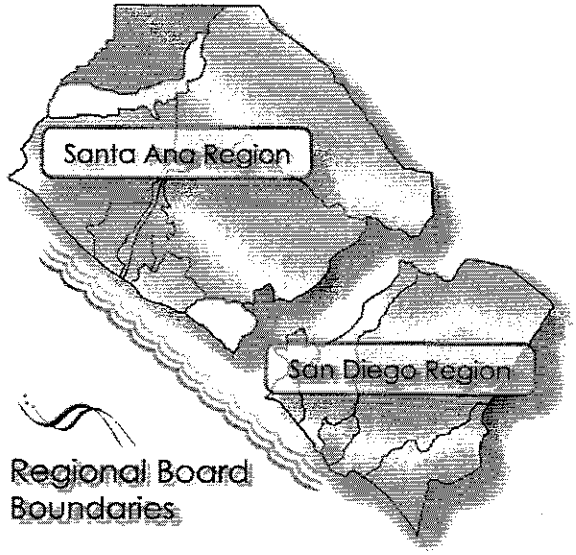
SUPPORTING DOCUMENTS:
1. Location Map
2. Status Report

RECOMMENDATION: This is an informational item only.

Status Report: Orange County MS4 Storm Water Programs Annual Report
May 12, 2004
Item No. 15
Supporting Document No. 1
Location Maps

The Municipal Permittees within the San Diego Region include:
Aliso Viejo, Dana Point, Laguna Beach, Laguna Hills, Laguna Niguel, Laguna Woods, Lake Forest, Mission Viejo, Rancho Santa Margarita, San Clemente, San Juan Capistrano, and the County of Orange.





CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

STATUS REPORT

MUNICIPAL STORM WATER PROGRAMS OF SOUTHERN ORANGE COUNTY

(REGIONAL BOARD ORDER NO. R9-2002-01)

Jeremy Haas
Environmental Scientist
Watershed Protection Unit

April 29, 2004

I. SUMMARY

The purpose of this report is to update the Regional Board on the status of the Municipal Storm Water programs of southern Orange County and our oversight activities. Regional Board Order No. R9-2002-01, the 3rd-term Municipal Storm Water Permit, was issued in February 2002. The last significant update to the Board was given at the April 2003 Board meeting, at which time the Jurisdictional Urban Runoff Management Plans (JURMPs) were under review. This report describes activities generally conducted between Spring 2003 and Spring 2004, with a focus on the Annual Reports, and provides an overview of expectations for the next year.

During the previous year our priority has been on the initial implementation of the jurisdictional programs that were developed to comply with the 3rd-term MS4 permit. These programs emphasize increased responsibility by the Cities to reduce pollutants in urban runoff. Our primary objective, therefore, was to ensure that the individual JURMPs addressed each component of the Permit, and this year our oversight was concentrated on the municipal and construction aspects of the programs. In Spring 2003 the JURMPs were reviewed, and we met with each Permittee to discuss the program. In the Summer, Standard Urban Stormwater Mitigation Plans (SUSMPs) for new development and significant redevelopment were reviewed and four Permittees were selected for Program Evaluations conducted by Tetra Tech, Inc. with our assistance. In the Fall, the initial Watershed Urban Runoff Management Plans (WURMPs) were reviewed. Finally, JURMP annual reports were assessed in the Winter. Due dates set forth in the Permit were met by the Permittees for all these submittals.

Our review of the JURMPs found the jurisdictional programs to be improved and headed in the right direction. Our greatest concerns were subsequently addressed in the Annual Reports. The Annual Reports were sufficiently descriptive of the programs, but a full evaluation of the program was hindered because they covered activities under both the 2nd and 3rd term Permits. The SUSMPs, after some revisions, were determined to be in compliance with the Permit and should now be fully implemented. At the time of the Program Evaluations, however, the SUSMPs had not been finalized. Finally, WURMP reviews were conducted with the intention of placing increased importance upon these plans as the jurisdictional programs became better established and fully implemented.

Notable Permittee program improvements during the year include an increased awareness of urban runoff pollution sources and increased attention to controlling illicit discharges and sources of pollution. This appears to be a result of both increased inspections conducted by the Permittees and an increased number of runoff-related complaints received by the Permittees. As a result, the next Annual Report is expected to include a more structured response plan to water quality problems associated with dry-weather urban runoff and stormwater.

We have identified several priorities within the municipal program on which to focus our attention this year. First, we intend to participate in additional program evaluations conducted by Tetra Tech. This year more attention in the program evaluations will be placed on how the Permittees are implementing SUSMPs for redevelopment, large new developments, and areas adjacent to sensitive waterbodies. We will also increase our efforts in industrial and commercial program activities to promote consistency between local and state expectations and to identify

sources of pollution. In addition, we plan to increase our effort on developing better performance measures. Finally, we intend to provide more guidance on refinement and implementation of the WURMPs, consistent with their expected increased importance in the San Diego MS4 permit renewal process.

II. THE YEAR IN REVIEW

Our focus over the last year has been to ensure that the updated programs (JURMPs) were implemented and addressed each component of the Permit, and oversight was concentrated on the municipal and construction aspects of the programs.

A. Jurisdictional Urban Runoff Management Plans (JURMPs)

As reported last April to the Regional Board, the Jurisdictional Urban Runoff Management Plans (JURMPs) for the Orange County Municipal Storm Water Permittees (per Regional Board Order No. R9-2002-01) were submitted on time and reviewed in Spring 2003. These documents marked the Permittees' transition to the 3rd Term Permit. The JURMPs mostly followed a model template developed by the County with participation from cities in both the San Diego and Santa Ana Regional Board jurisdictions. As a result, the JURMPs generally had similar strengths and deficiencies. Following review of the JURMPs, we met individually with each Permittee to discuss our comments and to review the jurisdictional program. Next, we provided a response letter to each Permittee that offered guidance on addressing our broadest concerns by the first annual report/update and, where necessary, listed specific items that were to be addressed promptly.

The three most significant issues found during the JURMP reviews were:

1. Seven cities did not appear to specifically state that persons responsible for existing commercial, industrial and residential activities within the city must implement best management practices (BMPs) as directed by the City;
2. The documents and associated "BMP fact sheets" did not clearly state which BMPs are minimum requirements or how each City will require the specific BMPs; and
3. The documents did not clearly identify additional BMP controls for areas tributary to 303(d) impaired waterbodies.

These and other items were required to be addressed in the first Annual Reports. Most notably, the BMP fact sheets that are the primary educational and inspection tool used by the Permittees were revised in the November 2003 Annual Reports to clearly state which BMPs were required to be implemented during various residential, commercial, industrial and municipal activities.

Interestingly, our review of the JURMP and initial BMP Fact Sheets revealed a general misunderstanding between the scale of our expectation and the Permittees' interpretation of "required BMPs" called for by the Permit. The Permittees submitted activity-based fact sheets that provided guidance, but lacked actual minimum requirements. In contrast to our statements during the Permit renewal, they had interpreted the Permit to require that the initial JURMP describe which BMPs would be required at every facility subject to the Permit, and they were

reluctant to do so. During our JURMP meetings we clarified our intent that the Permittees require at least broad scale BMP commitments (such as "do not expose materials to rainfall") while allowing the City inspectors and/or responsible party to select the actual means for meeting that requirement based on guidance in the JURMPs/Fact Sheets (such as "store materials indoors" or "cover outdoor storage materials"). Following our meetings, the Permittees expressed more comfort in identifying basic practices as requirements, while providing a list of site specific BMPs as alternatives for implementation. Revised BMP fact sheets that clearly state minimum BMP requirements for activities were then submitted with the Annual Reports, and the fact sheets now list minimum requirements for residential, commercial, industrial and municipal activities.

B. JURMP Annual Reports

The first Annual Reports under the 3rd-Term Permit were submitted in November 2003. They document progress in the urban runoff programs of southern Orange County relative to past annual reports. The reporting period covered the transition to the 3rd-term Permit. The most significant development was the strengthening of the individual, jurisdictional program capabilities. The reporting period was primarily marked by identification of best management practices (BMPs) and internal program enhancement, including a shift in complaint and incident response from the Principal Permittee to the individual cities. Some Permittees launched enhanced inspection programs, while others planned to start inspections after the reporting period. Additionally, all Permittees described active public education efforts and participation in countywide studies and program development. Two particularly noteworthy accomplishments include improvements of the BMP fact sheets to clearly identify reasonable minimum requirements and initiation of a task to verify post-construction BMPs. Following earlier reviews of the JURMPS in February 2003, we had specifically asked Permittees to clarify minimum required BMPs, and they did so. In response to the Annual Reports, two cities were asked to provide additional information and several were requested to provide additional descriptions in the next annual reports. No enforcement actions were necessary for inadequate reporting.

Because the stormwater programs are now fully implemented, we expect the second Annual Reports (due November 2004) to contain a better assessment of source abatement activities and investigations and a more thorough analysis of program effectiveness. While the metrics presented in the first Annual Report are helpful for program characterization and some measures of effort, the metrics lack the detail necessary to analyze certain program elements such as the effectiveness of response actions and the feasibility of BMPs.

C. Monitoring Program Results

The Annual Reports also include initial data from the monitoring program conducted under the 3rd-term Permit. The 3rd-term monitoring program is substantially revised from previous monitoring programs because it places increased focus on habitat conditions of receiving waters and potential stormwater impacts in the nearshore coastal zone. The new plan will investigate the effect of stormwater plumes on the nearshore marine environment. Inland, the plan includes

the "triad approach" of bioassessment studies, toxicity testing, and chemical parameters. As described in the Annual Report, the intent of this plan, which is consistent with the Permit requirements, is to identify and describe urban runoff impacts, identify sources of impairments, target follow-up studies, and target BMP implementation more effectively.

The five key elements of the 3rd-Term Permit monitoring program are:

1. Urban stream bioassessment monitoring;
2. Long-term mass loading monitoring;
3. Coastal storm drain outfall monitoring;
4. Ambient coastal receiving water monitoring; and
5. Dry-weather reconnaissance monitoring.

1. Urban Stream Bioassessment

Twelve stations plus three reference sites were included in the urban stream bioassessment component in November 2002 and June 2003. The overwhelming majority of non-reference sites ranked poor or very poor in the Index of Biotic Integrity. The Annual Report attributes the low rankings to the degree of watershed urbanization and the effect of toxicity. If toxicity results are repeated in subsequent monitoring, the program calls for follow-up studies, such as toxicity identification evaluations, upstream source identifications, or evaluations of physical habitat disturbance.

2. Long-Term Mass Loading

Mass loading data in the Annual Report was submitted for three of six mass loading stations. Data for all six is expected in the next Annual Report. At these stations, event mean concentrations are compared to acute and chronic CTR criteria for both marine and freshwater environments. The Annual Report notes that there were few exceedances of acute freshwater criteria and numerous exceedances of acute saltwater criteria for copper and nickel. Chronic criteria was exceeded at various times for both freshwater and saltwater cadmium and nickel. Toxicity tests were also conducted at the six mass loading stations. Toxicity during storm events is attributed to dissolved metals, as opposed to pesticides at these stations.

3. Coastal Stormdrain Outfall Monitoring

Coastal stormdrain outfall monitoring evaluated indicator bacteria counts upcoast and downcoast of thirty coastal stormdrains roughly four times per month. The Annual Report notes that between January and June 2003 five drains exceeded criteria more than five times, and exceedances were often associated with antecedent rainfall. The data also indicates that the elevated counts routinely found at the outfalls were usually not evident at the upcoast and downcoast stations.

4. Ambient Coastal Receiving Water Monitoring

Ambient coastal receiving water monitoring included marine toxicity testing and chemical sampling. The Annual Report notes that five stations showed substantial toxicity accompanied

by CTR exceedances of metals. Initial evaluation in the Annual Report suggests that copper may be of particular concern.

5. Dry Weather Reconnaissance

Dry-weather reconnaissance sampling was conducted only once (in June 2003) prior to the end of the reporting period for the first Annual Report. This data represents only a portion of the dry-weather program and an evaluation of the full first year of monitoring will be provided in the second Annual Report. The limited data provided in the first Annual Report identified potential water quality problems at fourteen stations for a variety of constituents.

D. MS4 Program Evaluations

Full implementation of the JURMPs (except for the SUSMP provision) was required at the time they were submitted in February 2003. In June 2003 Tetra Tech, Inc., with assistance from the Regional Board and U.S. Environmental Protection Agency Region 9, conducted program evaluations of four of the thirteen Permittees. The objectives of the program evaluations were to determine compliance with the 3rd Term Permit and to evaluate the current implementation status of the JURMPs with respect to EPA's storm water regulations. The program evaluations included in-field verification of program implementation. The four Permittees evaluated in 2003 were the County of Orange and the cities of Mission Viejo, San Clemente, and San Juan Capistrano.

A final program evaluation report was produced in July 2003 that identified potential permit violations, program deficiencies, and positive attributes. The program evaluation report was distributed to the Permittees. It also provided the Regional Board recommendations for further evaluation.

Program areas recommended for further evaluation in Tetra Tech's Program Evaluation Report included:

1. An evaluation of the other Permittees not evaluated;
2. Intensive reviews of the Permittees' implementation of the local SUSMPs, after they have been approved;
3. A review of each Permittee's industrial and commercial inspection and enforcement process, once a sufficient number of inspections has been performed;
4. A review of the commercial inspections to be performed by the Orange County Health Department;
5. A reinspection of municipal yards where potential permit violations were identified; and
6. A review of the methods the Permittees intend to use to measure the long-term effectiveness of the JURMPs.

Because these program evaluations were conducted after the reporting period for the November 2003 Annual Report, follow up activities by the Permittees are expected to be reported in the next Annual Report, due November 2004. In addition, the evaluations were conducted before

SUSMPs were finalized. We are expecting to support additional program evaluations conducted by Tetra Tech, Inc. during the next year.

E. WURMP Review

The Watershed Urban Runoff Management Programs (WURMPs) were submitted in August 2003 and provide useful characterizations of the watersheds the most prominent urban runoff-related water quality problems. They also serve as a framework to begin to collaboratively address those urban runoff water quality problems with specifically targeted remedial actions. As such, the WURMPs should be valuable tools for both the public and governmental agencies as the plans continue to evolve.

Except for municipalities in the Aliso Creek watershed, the submitted WURMPs essentially represent a first step in the process of addressing urban runoff water quality problems on a watershed basis. Although some maps, water quality analyses, and descriptions of planned efforts were incomplete, we expect these to be completed in the next annual report. As with the JURMPs, the Permittees used a model WURMP template, so the six WURMPs generally had similar strengths and deficiencies.

Some of our primary concerns with the initial WURMPs included:

1. The WURMPs in general did not include specific information on the likely sources of the urban runoff water quality problems identified;
2. The use of overly broad templates prevented development of watershed-specific programs. For instance, the education and public participation efforts cited in the WURMPs are generally regional efforts not tailored to specific watershed urban runoff water quality problems; and
3. Assessment strategies did not discuss expectations regarding the identified water quality concerns, and they did not provide expectations or criteria for management decisions. In the next Annual Report, we expect performance measures to be developed and tailored to assess the effectiveness of specific planned actions.

In October 2003 we offered comments addressing these concerns and provided guidance regarding our expectations for future WURMP implementation. In addition, the WURMPs described plans to develop watershed management groups to encourage public agency collaboration and public participation. In response, we offered several suggestions based on our Watershed Management Initiative for improving long-term success.

F. Responses To Impaired Waterbodies

An important element of the MS4 program is addressing receiving water impairments caused by urban runoff and stormwater. In southern Orange County the most notable impairments are from bacteria indicators at the beaches, Dana Point Harbor, and in Aliso Creek. Essentially the entire southern Orange County coastline is impaired for indicator bacteria. As more data is collected, however, it is clear that inland streams are also impaired for Recreation and Wildlife beneficial uses from urban runoff and stormwater discharges of metals, phosphorus, and other potentially toxic constituents.

Responses from the Permittees identified in the Annual Reports include targeted inspections and education, additional monitoring, BMP assessment, and dry-weather diversions to the sanitary sewer. The responses are not uniform throughout the area, but seem to be a function of Regional Board enforcement, available resources, and public involvement.

Inspections in the Aliso Creek watershed have led to the development of a suite of suspected bacteria sources influenced by anthropogenic activities. These sources include pets, organic fertilizers, restaurant waste, and wildlife, and they are primarily conveyed to the receiving waters by legal irrigation runoff and illicit wash down activities. In addition, attention is increasingly being paid to fate and transport within MS4 system and receiving waters. While the Permittees have identified general suspected sources, it is unclear whether broad-based source control efforts are effective in reducing pollution, and there have been some impediments to tracking inland sources and BMP effectiveness. The Permittees, both collectively and individually are evaluating treatment BMPs for indicator bacteria (e.g., CDS, ultraviolet radiation, wetlands, inlet filters), and several have initiated discussions with water districts and homeowners associations regarding water-efficiency as a dry-weather prevention tool.

Finally, there are currently approximately 38 diversions of MS4 discharges to the sanitary sewer in place in southern Orange County, mostly at the beach, and there are plans to construct nearly 50 more. Urban runoff diversions are increasingly being proposed and used because dry-weather and stormwater urban runoff are contaminating the coastline. Diversions are currently used only for dry-weather flows because wastewater treatment plants lack capacity to treat large volumes of storm flows. In addition, there is a trend toward capturing urban runoff to increase non-potable water supply.

III. WORKPLAN EXPECTATIONS

Based on ongoing activities related to oversight of the municipal stormwater programs of southern Orange County, we have identified several priorities within the municipal program on which to focus our attention this year. In general, there will be a shift from initial program implementation to a focus on particular elements of the programs that either were not fully implemented last year or are associated with priority water quality concerns.

A. Program Evaluations

This year municipal storm water programs in south Orange County will continue to be evaluated by the U.S. EPA contractor, Tetra Tech, with Regional Board assistance. We hope to visit each Permittee that was not evaluated last year. The evaluations provide the Permittees with valuable feedback on the implementation and planning of their programs, and they provide valuable information to the Regional Board on the status of the jurisdictional programs. This year evaluations will be better able to assess SUSMP implementation and response to water quality monitoring. In addition, based on previous program evaluations and our review of the Annual Report, we intend to increase dialogue on the development of effective performance measures.

B. Industrial and Commercial Activities

This year we plan to increase efforts on the industrial/commercial components of the jurisdictional programs. Under the Third-Term Permit, the Permittees are conducting many more inspections than in the past, and, as a result, facilities are increasingly expected to implement BMPs. This year we intend to increase assistance in industrial and commercial activities to promote consistency between local and state expectations and to identify sources of pollution.

C. SUSMPs

Last year the SUSMPs were not fully developed at the time of the program evaluations or in the period covered in the first Annual Reports. This year more attention in the program evaluations and review of Annual Reports will be placed on how the Permittees are implementing SUSMPs for redevelopment, large new developments, and areas adjacent to sensitive waterbodies.

D. Bacteria TMDL Implementation Plans

The Regional Board's Bacteria-Impaired Waters TMDL Project I for Beaches and Creeks addresses total of 18 beach segments and inland creeks in the San Diego Region, including the shoreline in Orange County and all of Aliso Creek. A draft of the Technical TMDL report is complete and currently available for informal public review. The Bacteria Project I TMDLs are currently scheduled to be brought before the Regional Board in June 2005. Development of an implementation plan for the bacteria TMDLs in southern Orange County may involve modifications to the municipal storm water permit or alternate regulatory strategies related to the municipal storm water programs.

E. WURMPs

The third-term Permit requires the Permittees to develop Watershed Urban Runoff Management Programs (WURMPs) to address water quality problems/issues on a watershed basis in addition to their jurisdictional activities. Permittees within a watershed are required to identify and prioritize major water quality problems in the watershed and the likely sources of the problem; develop an implementation schedule of short- and long-term activities necessary to address the highest priority water quality problems; and identify the permittee(s) responsible for implementing each activity. Public participation, watershed-based land use planning, education, and long-term effectiveness assessment are also requirements of the WURMP. Except for the Aliso Creek watershed, which has had significant multi-jurisdictional participation as the result of Regional Board actions, the initial WURMPs generally provided a framework for addressing the requirements. This year we intend to devote more time to ensure that the development and implementation of the WURMPs meets the objectives of the Permit and can function as a long-term tool for addressing watershed-scale water quality concerns from MS4 discharges.

F. Monitoring Program

The first full year of monitoring conducted under the 3rd-term Permit will be reported in the next Annual Report due November 2004. Because the monitoring program includes a range of adaptive strategies that require thorough data assessment, we plan to devote more effort to reviewing the monitoring data in the second Annual Report. This year's data will be important because it may confirm the preliminary data in the first Annual Report and can be used to improve management efforts regarding BMP implementation and evaluation, source identification, and targeted water quality monitoring. In addition, this year's data may be used to assess the effectiveness of certain program elements.

IV. CONCLUSION

During the past year Permittees were able to meet all the submittal deadlines required by the Permit and began to implement all the required components. In particular, the monitoring program was greatly revised and minimum best management practice requirements were established for residential, commercial, industrial, and municipal land-use activities. There has been regular dialogue between the Regional Board and the Permittees, and that is expected to continue during this year.

Program elements targeted for increased attention this year include SUSMPs, commercial/industrial activities, water quality monitoring, and watershed urban runoff management programs. This will be accomplished in part by continued participation in program evaluations conducted by U.S. EPA contractors, with Regional Board assistance. In addition, the development of implementation plans for bacteria TMDLs may require modifications to the MS4 permit or alternate regulatory strategies related to discharges from the municipal stormdrain systems.